

REMARKS

Claims 91 to 102 are pending in the present application.

It is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

With respect to paragraph two (2) of the Office Action, Figure 1 is objected to as the Office Action alleges that the legend –Prior Art – should be added.

Applicants respectfully traverse the objection to Figure 1. Applicants respectfully submit that Figure 1 pertains to the features of the present application and therefore the placement of the legend indicating “Prior Art” is incorrect. As explained on page 2, line 23 of the specification of the present invention, Figure 1 represents a block diagram that describes the present invention and not “prior art” as alleged by the Office Action. Applicants respectfully request withdrawal of the objection to Figure 1, as the specification clearly indicates that Figure 1 describes the present invention and not “prior art”.

With respect to paragraph three (3) of the Office Action, claims 91 to 102 were rejected under 35 U.S.C. §112, first paragraph as to the written description requirement. The Office Action alleges that claims 91 to 102 introduce new matter through the feature of “specifying a duration of the time window so that a current which flows through the consumer during the time window does not exceed a threshold value.”

Claim 91 relates to a method of activating an electromagnetic consumer having a movable element, the method comprising: ascertaining a switching instant within a time window, at which the movable element reaches a certain position; and specifying a duration of the time window so that a current which flows through the consumer during the time window does not exceed a threshold value; increasing the duration of the time window starting from a starting value if the current is smaller than the threshold value; and decreasing the duration of the time window if the current is greater than the threshold value.

As provided in the specification on page 4, lines 20 to 27, times t3 and t4 define a time window within which a switching instant is detected. Times t3 and t4 are specified on page 5, lines 1 and 2. As provided in Figure 2a and in the specification on page 3, lines 17 to 20, current I, flowing through the consumer 100, is plotted over times t1 to t6. As evidenced in Figure 2a, current I, flows through the consumer 100 over time periods t1 to t6. Additionally, the specification on page 5, lines 6 to 8 states that current rise through the window provided between times t3 and t4 is limited through the definition of the time window. As a consequence, the specification specifies both the time window through which the current flows, and the current flowing through the consumer, which in the exemplary

embodiment does not exceed a threshold value. Applicants respectfully submit that as the specification clearly discloses all of the features of claim 91, the rejection under 35 U.S.C. § 112, first paragraph should be withdrawn.

With respect to paragraph six (6) of the Office Action, claims 91 to 102 were rejected under 35 U.S.C. §112, second paragraph, as indefinite. The Office Action asserts that the feature of specifying a duration of the time window so that a current which flows through the consumer during the time window does not exceed a threshold value” appears to contradict two other limitations in the independent claims (increasing and decreasing the duration).

Applicants respectfully submit that as provided in the specification, $t_3 = t_{BIP} - (B/2)$ and $t_4 = t_{BIP} + (B/2)$ and a width of a time window duration B is specified as provided in Figure 3. The duration of the time window B, as provided on page 5, lines 15 to 26 may be increased over time such that a maximum current IB is no greater than a threshold value SW. The duration of the time window B, as provided on page 6, line 31 to page 7, line 5, may be shortened so that a maximum value IB is lower than the threshold value. The window duration therefore is specified, however the length of the window (within the predefined specified limits) can be adjusted to maintain current values within desired levels. Applicants respectfully submit that the claims are fully consistent with the specification and are not indefinite. Withdrawal of the indefiniteness rejections of claims 91 to 102 is therefore respectfully requested.

With respect to paragraph nine (9) of the Office Action, claims 91 to 102 were rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent Number 5,592,921 (“Rehbichler”). Applicants respectfully submit that Rehbichler does not anticipate claims 91 to 102 for the following reasons.

As regards the anticipation rejections of the claims, to reject a claim under 35 U.S.C. § 102(b), the Office must demonstrate that each and every claim feature is identically described or contained in a single prior art reference. (*See Scripps Clinic & Research Foundation v. Genentech, Inc.*, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991)).

The Rehbichler reference relates to a method and device for actuating an electromagnetic load, and only provides a method for which a switching instant may be detected. For example, Rehbichler identifies that it provides a method for actuating an electromagnetic load, a possible means of determining the switching time with a low degree of expenditure. (Col. 1, lines 32 to 34.) The electromagnetic load is connected with a switch that is supplied with an actuation signal. For identification of a switching time of the electromagnetic load, a parameter which characterizes the actuation signal is evaluated.

(Abstract, lines 1 to 7). Furthermore, the Rehbichler reference states that in a first time period, until signal CHIL reaches a higher value, a current controller 140 adjusts the current flowing through the solenoid valve to a desired value IS1 prescribed by the control unit. The control unit opens switching means 110 when an upper current threshold is exceeded. Lower current threshold is fluid and is achieved via deactivation of switching means 110 for a specific time TP. When the current value is exceeded the switch opens and after the prescribed time TP the switch closes again. The current I through the solenoid valve oscillates between a prescribed upper threshold and a lower value. (Col. 4, lines 12 to 24).

The Rehbichler reference merely indicates that until signal CHIL reaches a higher value, the current flowing through the solenoid valve is adjusted to a desired value IS1 prescribed by a control unit such that when the current value is exceeded the switch opens and after a prescribed time TP the switch closes again. The Rehbichler reference, however, does not identically disclose (or even suggest) either an arrangement or method to perform the steps of specifying a duration of the time window so that a current which flows through the consumer during the time window does not exceed a threshold value, increasing the duration of the time window starting from a starting value if the current is smaller than the threshold value, and decreasing the duration of the time window if the current is greater than the threshold value, provided for in the context of each of independent claims 91 and 97.

As the Rehbichler reference does not identically disclose (or even suggest) the feature in which the duration of the time window starting from a starting value is increased if the current is smaller than the threshold value, and in which the duration of the time window is decreased if the current is greater than the threshold value, Rehbichler does not anticipate independent claims 91 and 97.

Accordingly, claims 91 and 97 are allowable, as are their respective dependent claims 92 to 96 and 98 to 102.

With respect to paragraph ten (10), claims 91 to 102 were rejected under 35 U.S.C. § 102(b) as anticipated by United Kingdom Patent Application No. GB 2 311 559 (“Fischer”).

As regards anticipation law, the above discussion is referred to here.

As explained above, claim 91 is to a method of activating an electromagnetic consumer having a movable element, the method including ascertaining a switching instant within a time window, at which the movable element reaches a certain position, and specifying a duration of the time window so that a current which flows through the consumer during the time window does not exceed a threshold value, *in which the duration of the time window starting from a starting value is increased if the current is smaller than the threshold*

value, and in which the duration of the time window is decreased if the current is greater than the threshold value.

In contrast the Fischer reference purportedly concerns a method and an apparatus for controlling an electromagnetic switching member with an excitation winding and a movable armature such that within a time window, a current is evaluated to detect a switching instant at which the armature reaches a new end position. The time window is enlarged when no reliable switching instant is detected within the time window. (Page 2, lines 1 to 7).

Furthermore, the Fischer reference states that “[t]he measurement window, in particular the beginning FB of the window, cannot be chosen to be as large as desired, since the beginning FB of the window fixes the instant at which the current is regulated down to the holding current” and “[i]f this current is chosen to be too early, the valve does not switch sufficiently rapidly or even not at all.” (Page 6, lines 8 to 12). Consequently, Fisher changes a time window based upon switching NOT based upon maximum current levels. The Fisher reference provides a completely different arrangement and method than the claimed subject matter of claims 91 and 97.

Accordingly, claim 91 is allowable, as are its dependent claims 92 to 96.

Claim 97 includes features like those of claim 91, and is therefore allowable for essentially the same reasons, as are its dependent claims 98 to 102.

It is therefore respectfully submitted that claims 91 to 102 are allowable.

Conclusion

It is therefore respectfully submitted that all of claims 91 to 102 are allowable. It is therefore respectfully requested that the objections and rejections be withdrawn, since all issues raised have been addressed and obviated. An early and favorable action on the merits is therefore respectfully requested.

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Respectfully submitted,

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